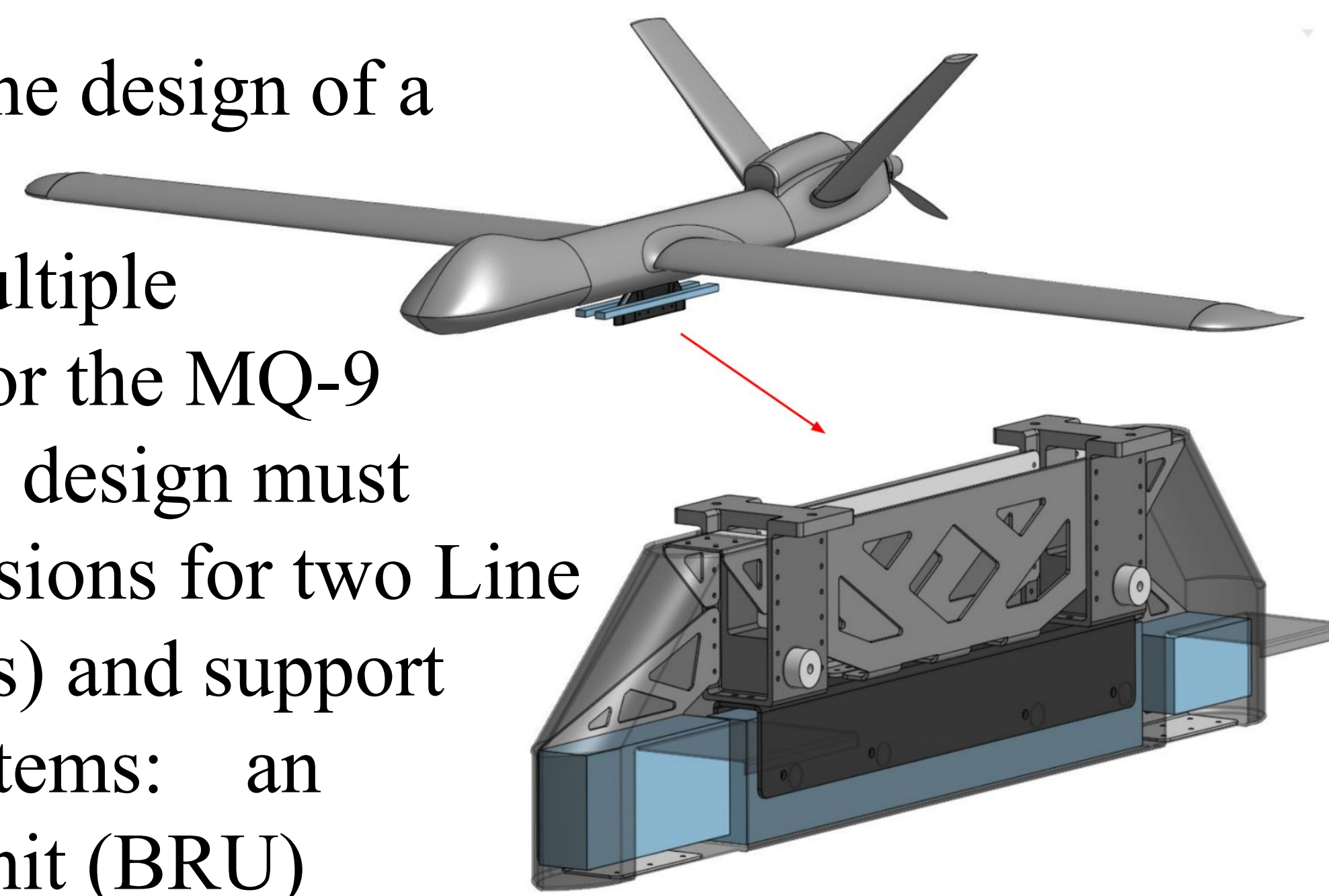
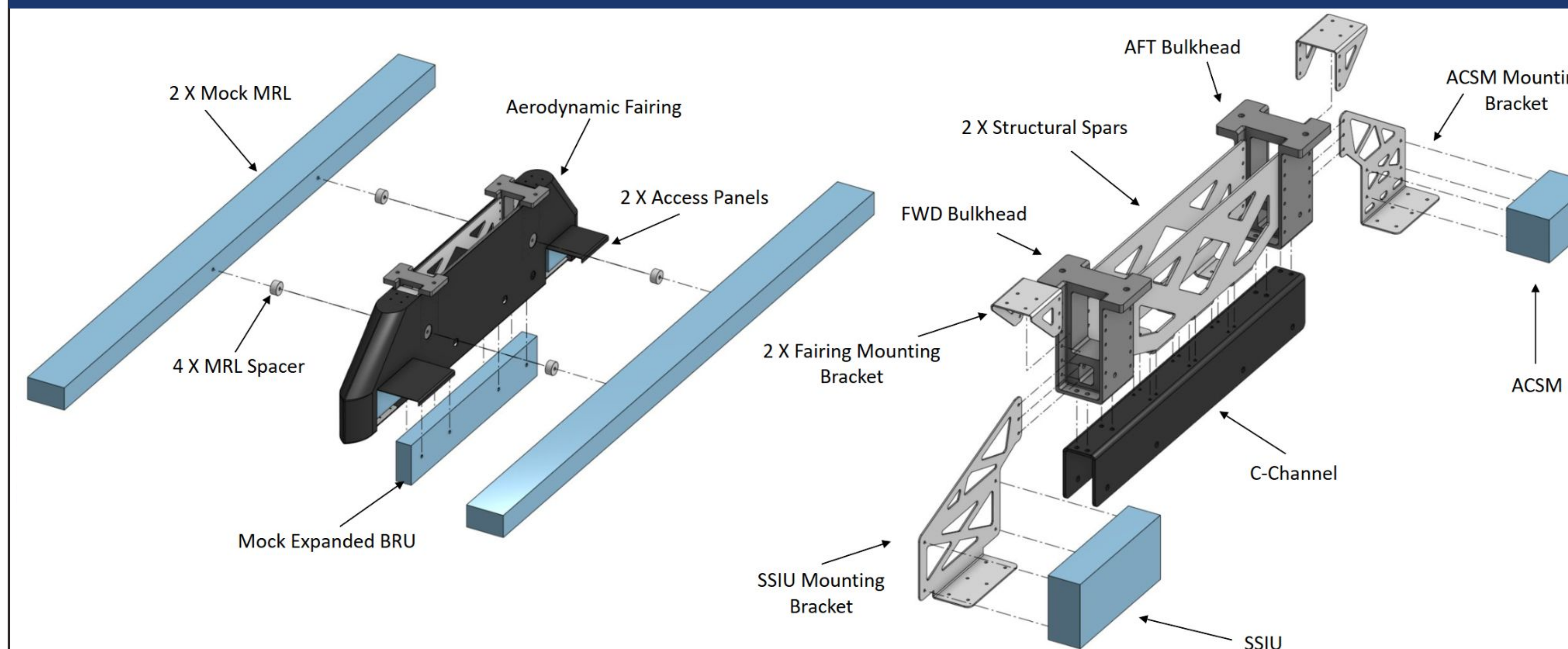


## Project Overview

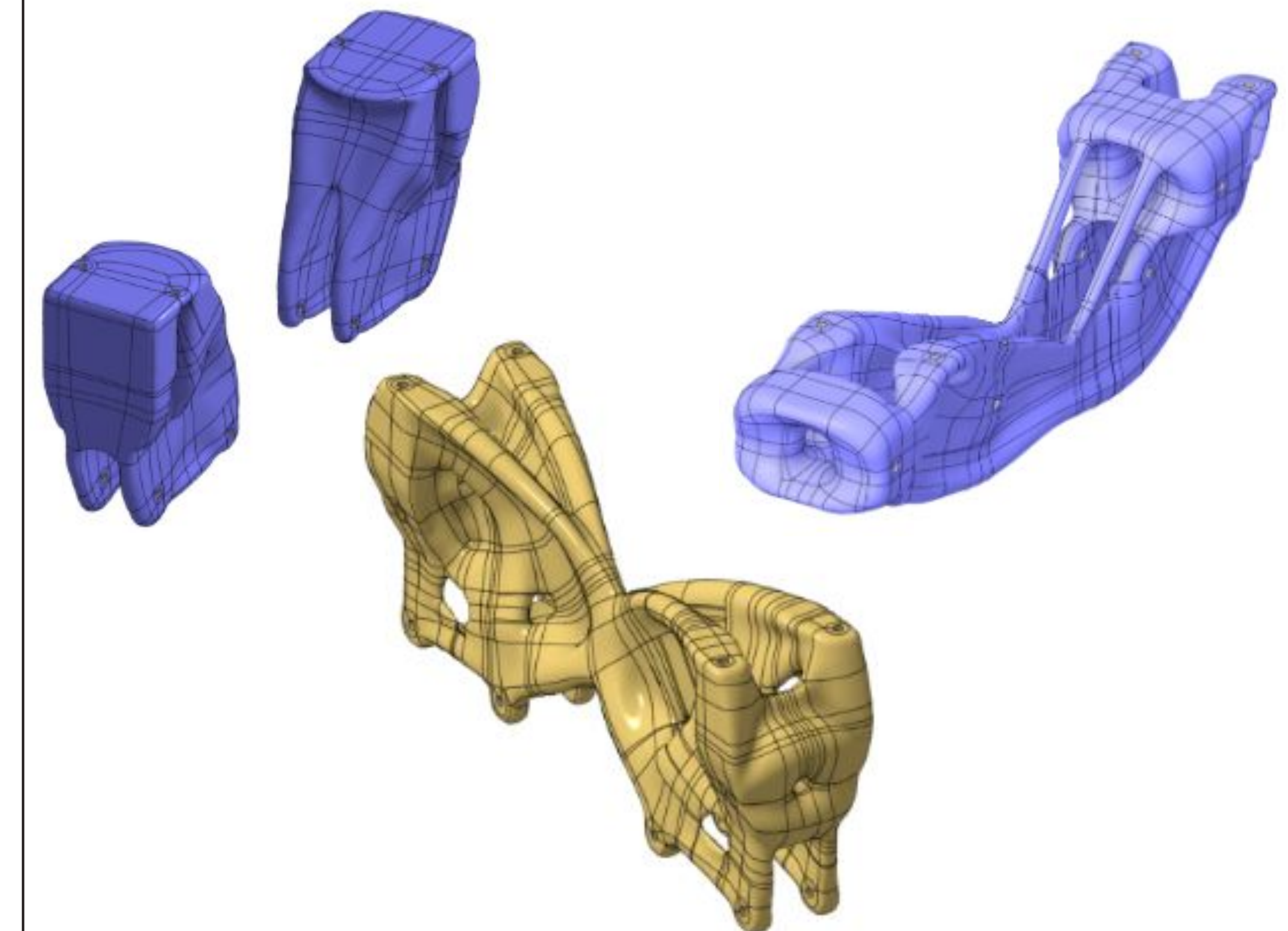
This project focuses on the design of a scaled modular pylon capable of supporting multiple payload configurations for the MQ-9 autonomous aircraft. The design must integrate mounting provisions for two Line Replaceable Units (LRUs) and support two payload carriage systems: an expanded Bomb Rack Unit (BRU) with both 14-inch and 30-inch lug spacing, and a Missile Rail Launcher (MRL) with 30-inch mounting points. The pylon structure is enclosed by a fairing that improves aerodynamic performance.



## CAD Assembly



## Topology Optimization



- Visualized load transfer through the pylon
- Aided early-stage design iterations & later design decisions

## Meet the Team



Emiliano Mondragon Flores (M.E.)  
Team Lead



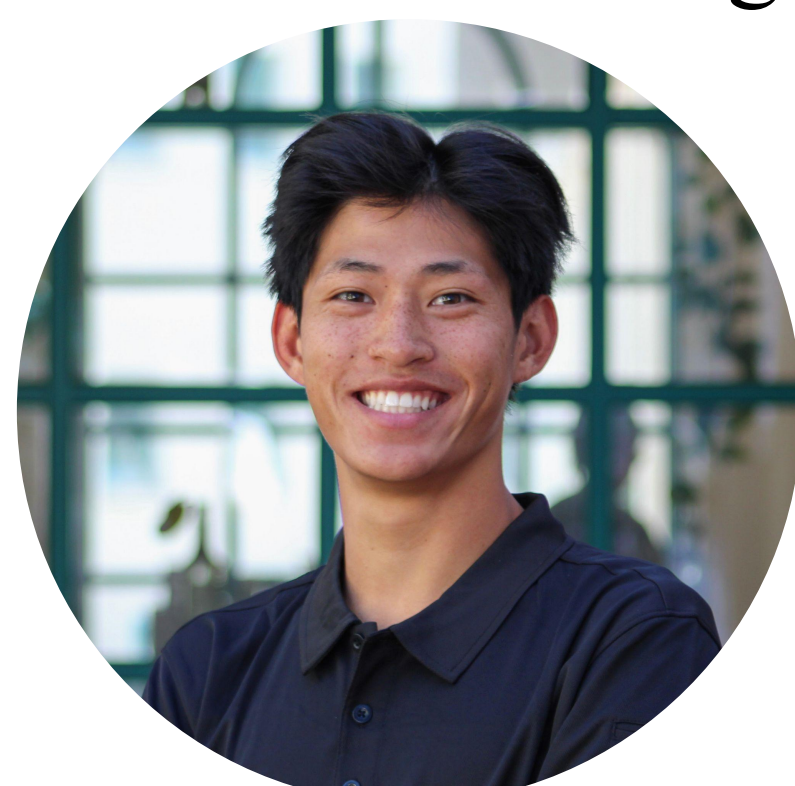
Wynter Trumpfheller (M.E.)  
Manufacturing Lead



Nathan Weast (M.E.)  
Design Lead

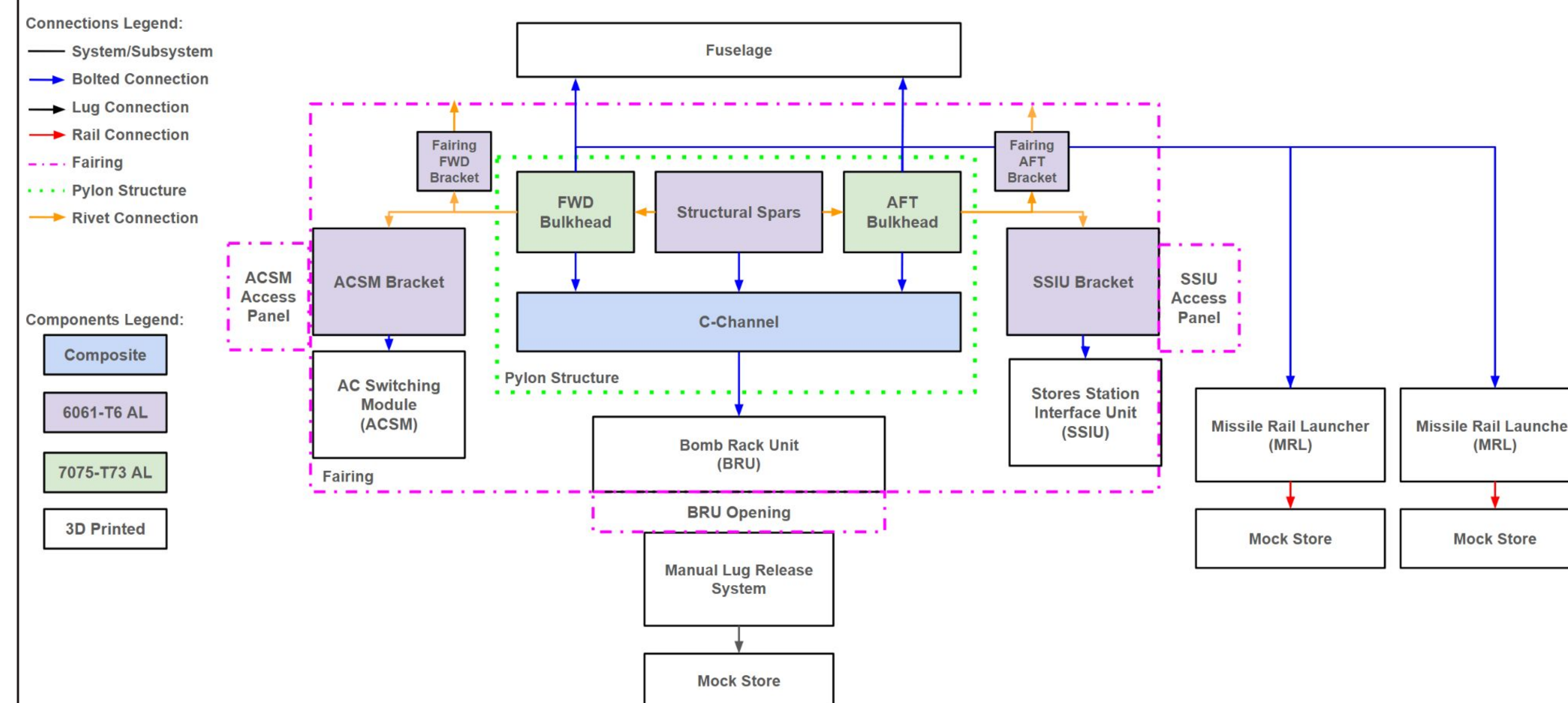


Jake Finn (M.E.)  
Testing/Instrumentation Lead

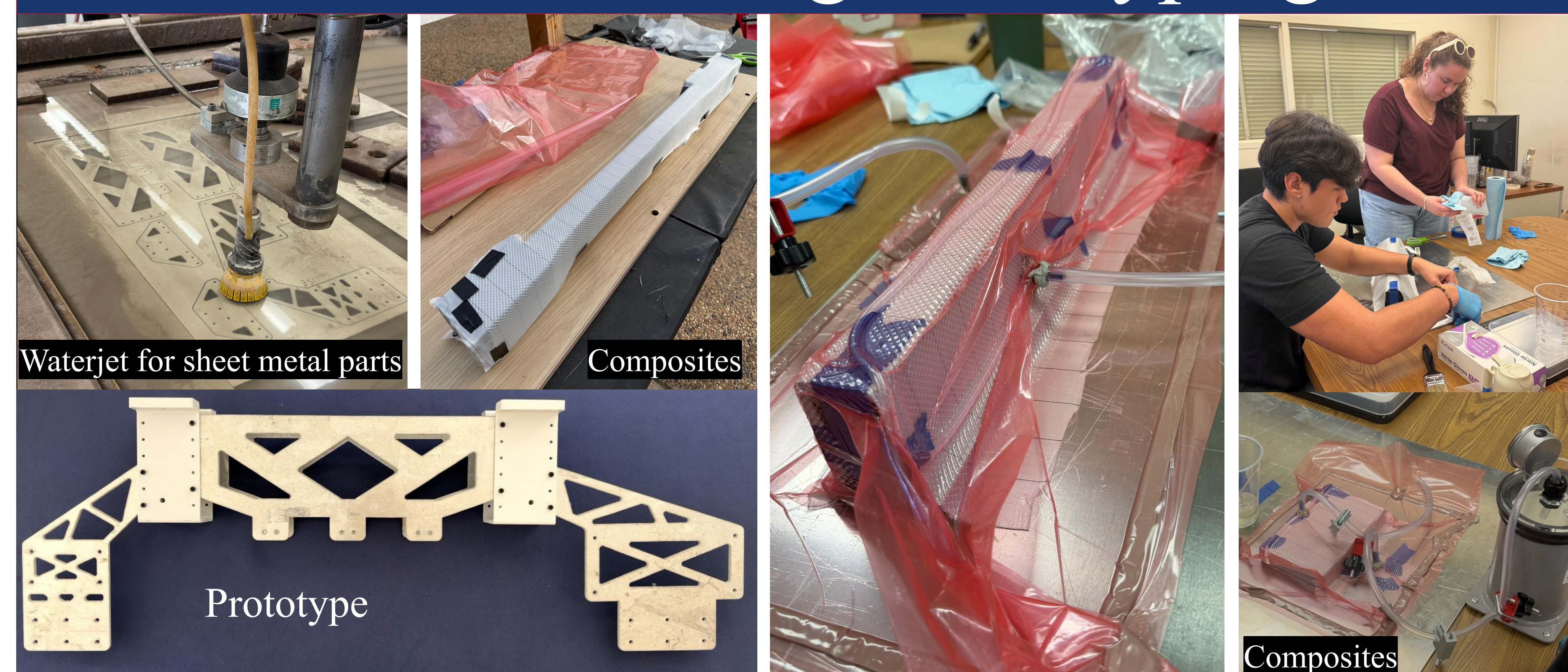


Justin Tong (M.E.)  
QC & Analysis Lead

## System Level Diagram



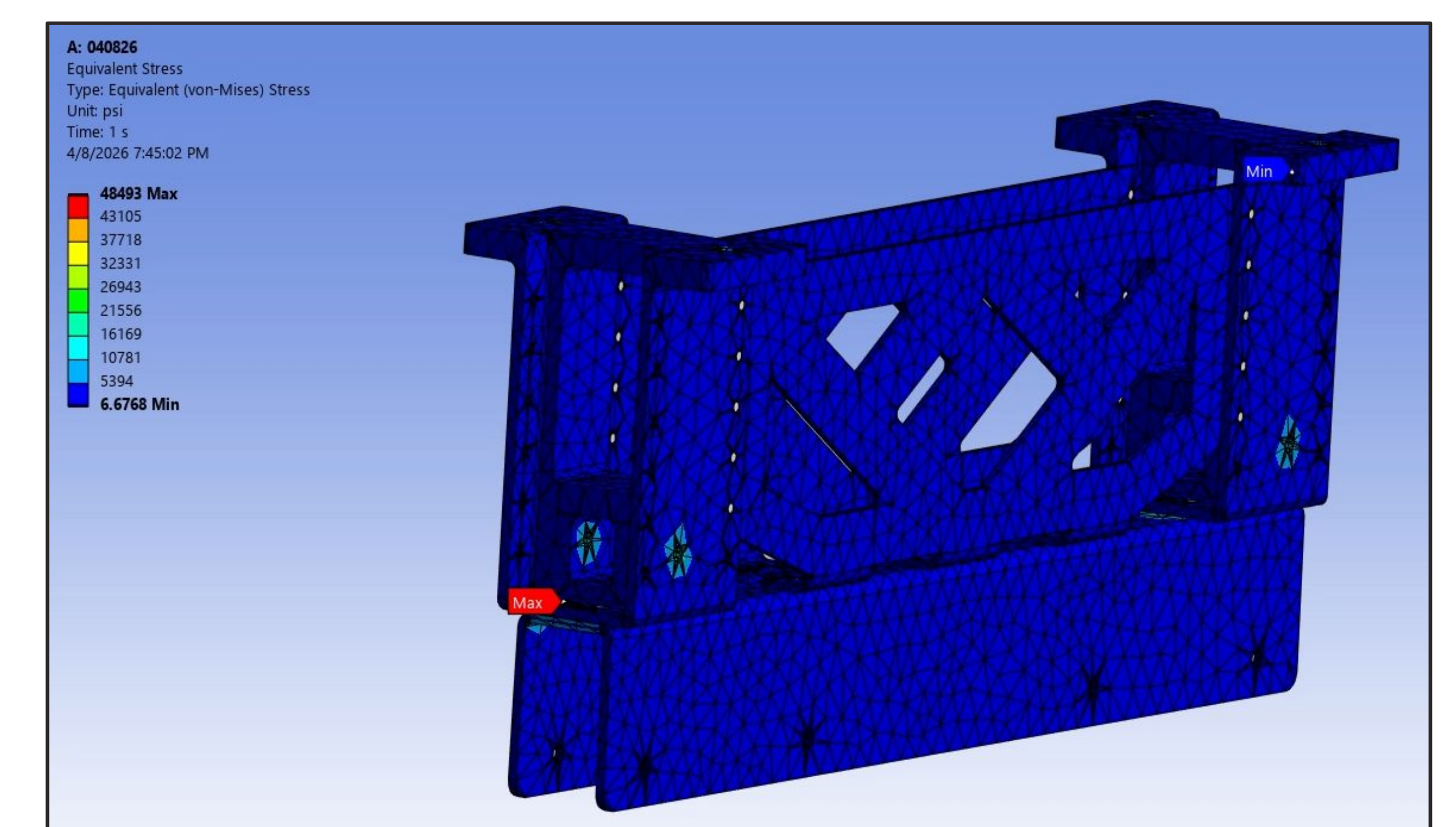
## Manufacturing/Prototyping



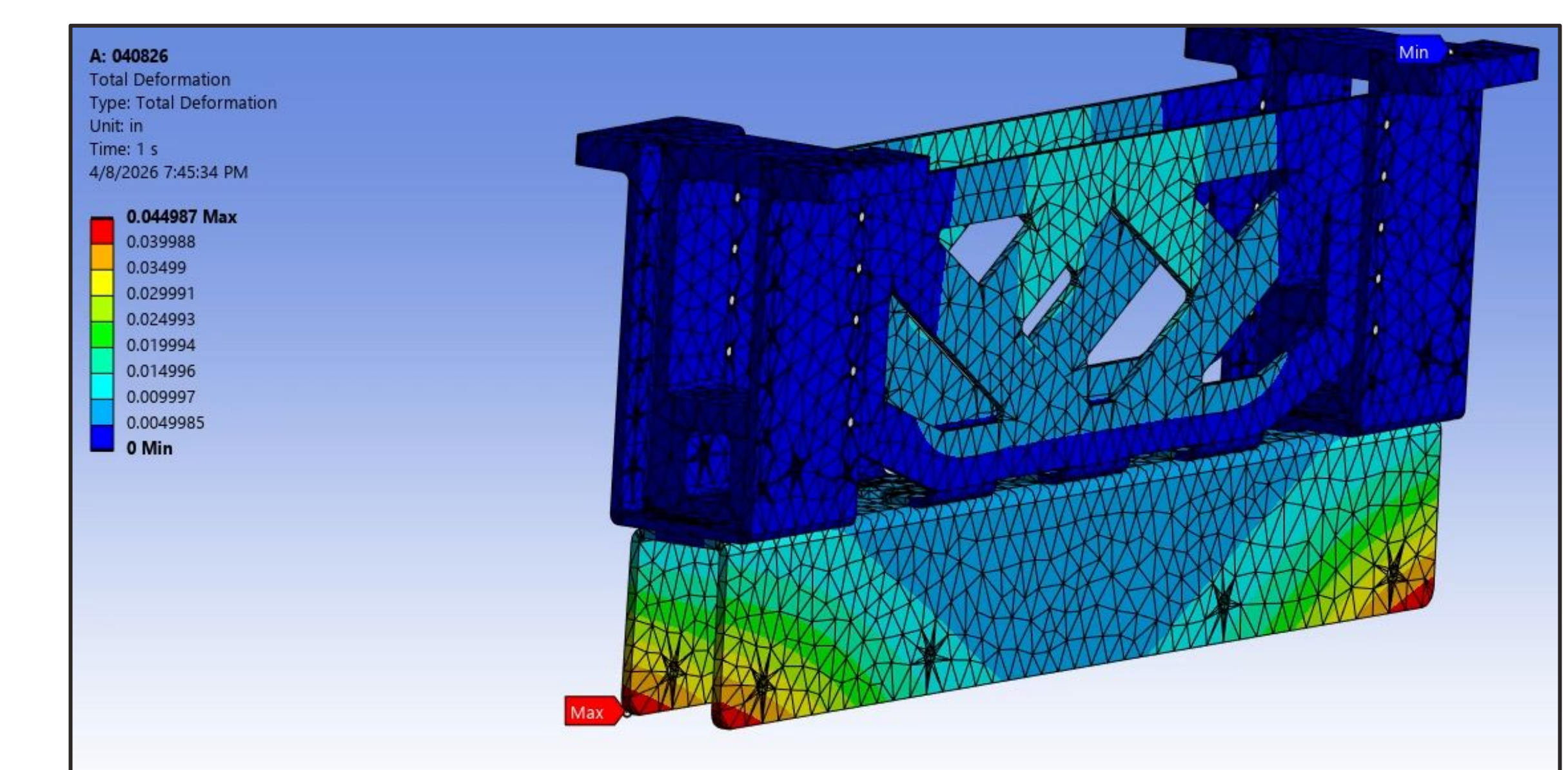
## Acknowledgements

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## Static Structural FEA



Equivalent Von Mises Stress on Pylon Assembly



Total Deformation of Pylon Assembly